IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:	**Confirmation No. 4689**
Chicara KAWAMURA et al.	:	Docket No. 2001-1140A
Serial No. 09/927,328	:	Group Art Unit 1714
Filed August 13, 2001	:	Examiner K. Wyrozebski Lee
A PROCESS FOR PRODUCING POLYESTER RESIN	:	

RESPONSE

THE COMMISSIONER IS AUTHORIZED TO CHARGE ANY DEFICIENCY IN THE FEE FOR THIS PAPER TO DEPOSIT ACCOUNT NO. 23-0975.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Responsive to the Office Action of June 20, 2003, the time for responding thereto being extended for one month in accordance with a Petition for Extension of Time submitted concurrently herewith, Applicants submit the following remarks in support of the patentability of the presently claimed invention over the references applied by the Examiner in rejecting the claims. Further and favorable reconsideration is respectfully requested in view of these remarks.

Initially, in response to the provisional rejection of claims 1-10 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of Serial No. 10/107,437, Applicants are submitting herewith a Terminal Disclaimer, thus overcoming the rejection.

The patentability of the present invention over the other applied references will now be discussed.

The present invention relates to a process for producing a polyester resin by subjecting the following three components:

a regenerated PES (see paragraph bridging pages 3-4 of the specification),

a polyhydric alcohol component, and

a polybasic acid component

to a concurrent reaction at a specific ratio.

Thus, according to the process of the present invention, there can be produced, within a short time, a high molecular weight polyester resin free of any problem in respect of physical properties, which is transparent and substantially free of formation of foreign matters or filtration residues, from a polyester resin which has been recovered from waste materials and regenerated.

This is clearly seen from a comparison between Example 1 and Comparative Example 1 in the present specification. In detail, when a regenerated PES, a polyhydric alcohol component (neopentyl glycol and trimethylolpropane) and a polybasic acid component (isophthalic acid) are made to react concurrently in accordance with the present invention, a desired polyester resin is obtained in about 6.5 hours (see Example 1), while, when the same regenerated PES and the same polyhydric alcohol component are made to react first, and then the same polybasic acid component is added to react, it takes about 16 hours, i.e., about 2.5 times as long, to obtain a polyester resin which is equivalent in physical properties (see Comparative Example 1).

The rejection of claims 1-8 under 35 U.S.C. §102(b) as being anticipated by Fisher is respectfully traversed.

Fisher (U.S. Patent 5,552,478) discloses digesting recycled PET to make oligomeric glycol, and then allowing the oligomeric glycol to react with an acid having fewer than 12 carbon atoms to make a polyester low profile additive.

The Examiner states that "In col. 4 (apparently meaning col. 7) addtitive number 4 is first formed by glycolysis of PET in presence of diethylene glycol and adipic acid." This statement is, however, incorrect.

Fisher, in column 7, only says that low profile additive number 4 was produced by firstly making PET react with diethylene glycol, and secondly allowing thus obtained glycolized PET to react with adipic acid. Thus, Fisher has no mention of glycolysis of PET in the presence of diethylene glycol and adipic acid.

Although the Examiner refers also to low profile additive number 7 which is mentioned in column 8 of Fisher, low profile additive number 7 was also produced by firstly digesting recycled PET with a diethylene glycol and neopentyl glycol mixture, and secondly allowing the resultant product to react with adipic acid.

As is seen from the above, Fisher fails to teach or suggest a process to produce polyester resin by subjecting three components of a regenerated PES, a polyhydric alcohol component, and a polybasic acid component to a concurrent reaction.

The rejection of claims 1-7 under 35 U.S.C. §102(e) as being anticipated by Yasumura et al. is respectfully traversed.

Yasumura et al. (U.S. Patent 6,353,036) discloses a process for producing an unsaturated polyester comprising the steps of (1) (A) depolymerizing polyethylene terephthalate with a polyhydric alcohol, (B) adding maleic anhydride to the depolymerization product to allow them to react with each other, and (C) adding dicyclopentadiene to the reaction mixture to cause an addition reaction, and (2) adding a polyhydric alcohol and a polybasic acid to the reaction product obtained in step (1) to cause a polycondensation reaction.

In the process of Yasumura et al., as mentioned above, PET is depolymerized with a polyhydric alcohol, and, then, a polyhydric alcohol and a polybasic acid are added to cause a polycondensation reaction. This reference does not teach or suggest a process wherein three components of PET, a polyhydric alcohol component, and a polybasic acid component are subjected to a concurrent reaction.

Thus, Yasumura et al. fails to teach or suggest a process to produce polyester resin by subjecting a regenerated PES, a polyhydric alcohol component, and a polybasic acid component to a concurrent reaction, as presently claimed. Nor does the reference suggest the technical advantage of the present invention as discussed above.

The rejection of claims 8-10 under 35 U.S.C. §103(a) as being unpatentable over Fisher or Yasumura in view of Salsman is respectfully traversed.

The comments set forth above concerning the Fisher and Yasumuara et al. references are considered to be equally applicable to this rejection.

As is clearly seen from its ABSTRACT, Salsman (U.S. Patent 5,726,277) only discloses making terephthalate polymer react with glycol in the presence of glycolysis catalyst to thereby decompose terephthalate polymer, and then allowing the thus obtained product to react with difunctional organic acid. Thus, Salsman fails to teach or suggest a process to produce polyester resin by subjecting three components of a regenerated PES such as PET, a polyhydric alcohol component, and a polybasic acid component to a concurrent reaction, or the technical advantages which are thereby attained.

In summary, none of the applied references teaches or suggests the characteristic features of the presently claimed invention, or the technical advantages of the present invention.

At the top of page 8 of the Office Action, the Examiner states that the Oguri et al. reference (U.S. Patent 6,429,233) is very relevant to the present claims, but cannot be applied in a rejection, since it does not qualify as prior art. It is Applicants' understanding that the Examiner's statement is based on the fact that the International application on which the Oguri et al. patent is based was filed August 28, 2000 (which was before the date of November 29, 2000 which is the effective date for revised 35 U.S.C. §102(e)). Therefore, the effective date of the Oguri et al. reference as prior art is the date of compliance with 35 U.S.C. §371(c)(1),(2) and (4), which is July 23, 2001. Nevertheless, Applicants note that this latter date (as well as the publication date of March 8, 2001 for the Oguri et al. published International application) is prior to the U.S. filing date of August 13, 2001 for the present application. Therefore, Oguri et al. is not available as prior art against the present invention only if Applicants are entitled to the benefit of the filing date of their Japanese priority applications, filed September 6, 2000 and March 2, 2001, both of which are before the effective date of Oguri et al. (July 23, 2001), as well as before the date the corresponding Oguri et al. International application was published (March 8, 2001). Accordingly, Applicants are submitting herewith verified English translations of both of their Japanese priority applications. [The Examiner has already acknowledged receipt of the certified copies of the priority applications.] In view of these translations, Applicants are entitled to the benefit of their priority dates, thus antidating the effective date of the Oguri et al. reference as prior art.

Therefore, in view of the foregoing remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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